

# **Pentium® 4 processor 2.20 GHz**

## **OEM Sales Training**



**Intel Corporation**  
**Intel Architecture Marketing Group**  
**Consumer Desktop Marketing**  
**December 2001**

# Agenda



**Introduction**

**Key Consumer Messages**

**Why Buy Now**

**Why Buy Performance Headroom**

**Why Buy Pentium® 4 processor 2.20 GHz**

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## **Extra Materials**

- The Intel Advantage
- Sales Analogies
- Performance Data

# Pentium® 4 Processor

Introducing 2.20 GHz and Intel® 845 chipset with DDR support



## Launching at 2.20 GHz

- Also shipping 2A GHz, "A" designator indicating the new 0.13 $\mu$  manufacturing process
- Intel's highest performing processor for desktop PCs

## New 0.13 $\mu$ manufacturing process

- Increased frequencies and lower power

## Double the amount of L2 cache to 512KB

- Improved performance for a wide range of applications

## Intel® 845 chipset with DDR support

- Expands the Pentium 4 processor platform with a great balance of price and performance
- Intel® 850 chipset with RDRAM\* delivers maximum performance platform for Pentium® 4 processor

***Delivers the Pentium 4 processor family throughout the mainstream market segments***





# Pentium® 4 Processor

## Key Consumer Messages



### **PERFORMANCE** for an awesome **DIGITAL MEDIA** experience

- Audio – Power to quickly encode digital music files
- Digital Video and Imaging – Performance to create, edit, and share movies and photos quickly and easily
- Communications – Power to communicate quickly and easily with friends and family
- Entertainment– Faster frame rates and smooth animation for lifelike 3D games

### **HEADROOM** for the next generation of software applications, technology, and internet innovations

***The center of your digital world***





# Pentium® 4 processor Chipsets

## Key Messages



### Intel® 850 Chipset :

- Offers maximum performance and headroom

### Intel® 845 Chipset :

- DDR expands the Pentium® 4 processor platform with a great balance of price and performance
- SDRAM delivers 'the' high volume platform with a balance of features and price

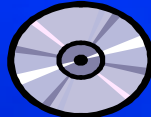
***Intel Offers Chipsets that support all major memory technologies***

# Why Buy Now

Usage Models Change Over Time...

## AUDIO

Listen to CDs



Postage stamp  
video playback



## VIDEO

Mainly text pages



Internet Audio



Internet Video



photos some animation



Your PC becomes  
a digital jukebox



Become a movie  
director on your PC



## INTERNET

Basic gaming



More complex 3D games



3D, animation, video, audio



Realistic environment  
and physics models



*...And Require More Performance Over Time*



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# Pentium® 4 processor and Windows\* XP

A Great Match



	Pentium® 4 processor	Windows* XP
Audio	Quickly encode MP3 files	Download, store, and playback high quality digital music
Video	Create, edit, and share Home Movies	Everything you need to create, share, and enjoy videos
Imaging	Design, edit and add effects to photo creations	Easily acquire, organize, and share digital photos with My Pictures
Communications	Communicate quickly and with friends and family	Communicate using instant messaging, voice, and video conversations
Entertainment	Faster frame rates and smooth animation	Personal entertainment system for great gaming and high-quality DVD videos



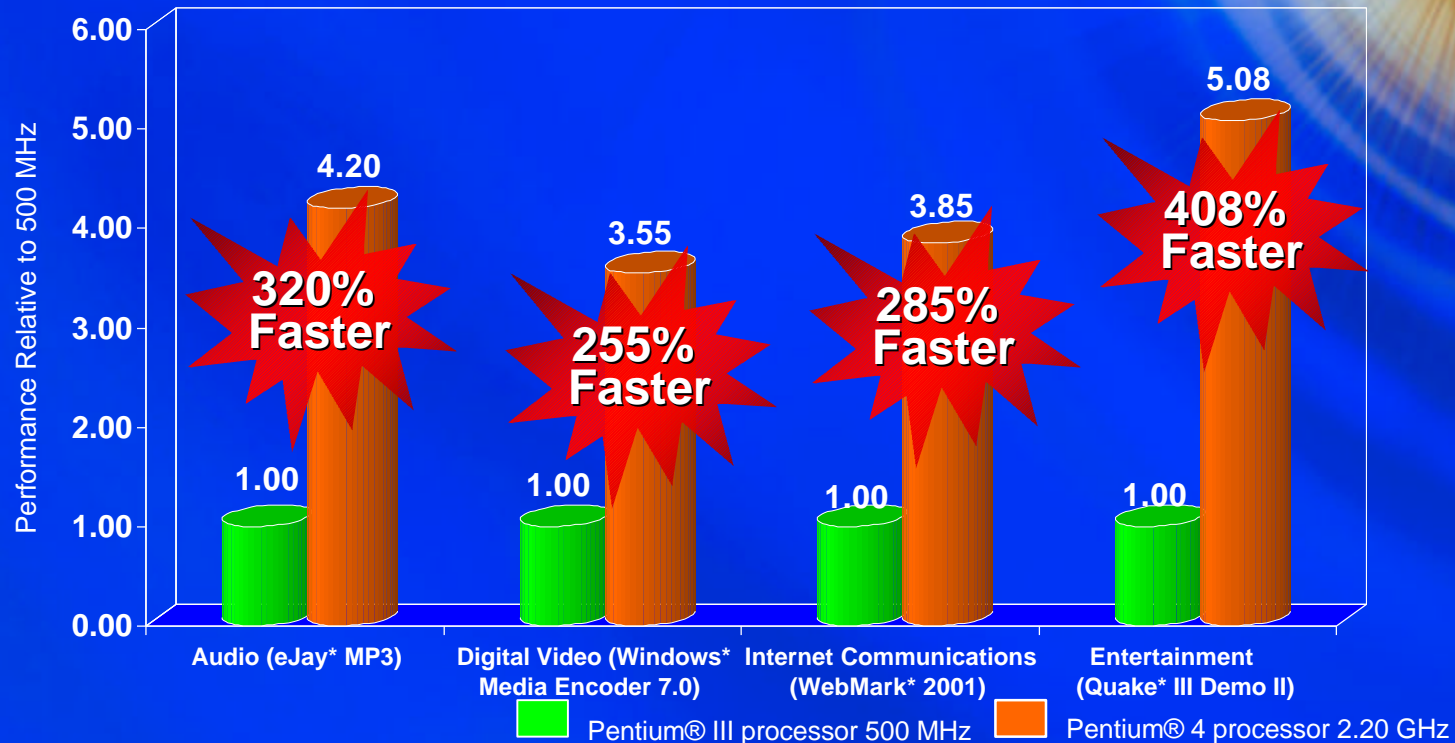
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# Why Buy Now

## Installed Base Needs Upgrading



***Pentium® 4 Processor Delivers Significant Performance Increase***



Pentium® III Processor at 500MHz – Intel Seattle SE440BX-2, 128 MB PC100 CL2 SDRAM Intel® 440BX-2 Chipset Platform- Diamond Viper 550 / nVidia TNT 2x AGP with 16 MB memory, nVidia reference driver 6.31 with MS DirectX 8.0, 1024x768 at 16-bit color, IBM DTTA-301010 10GB ATA-33 hard drive, DMA on, Windows® Me and Intel® Pro/100+ PCI LAN Pentium® 4 processor at 2.20 GHz – Intel® Desktop Board D850MD, 256MB PC800 RDRAM –45; Intel® 850 Chipset Platform – IBM® 30GB ATA-100 DTLA-307030 hard drive, Intel® chipset INF file v3.200.1008, Intel® Application Accelerator Storage Driver v1.01, Leadtek® WinFast® nVidia® GeForce® 3 4x AGP, nVidia Detonator® 4 v21.81 graphics driver, 1024x768 at 16-bit color, DirectX® 8.1, Windows® XP, 100 Mbps LAN; Intel® C & Fortran compilers 5.01 for SPEC; Intel® Pro/100+ PCI LAN Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance.

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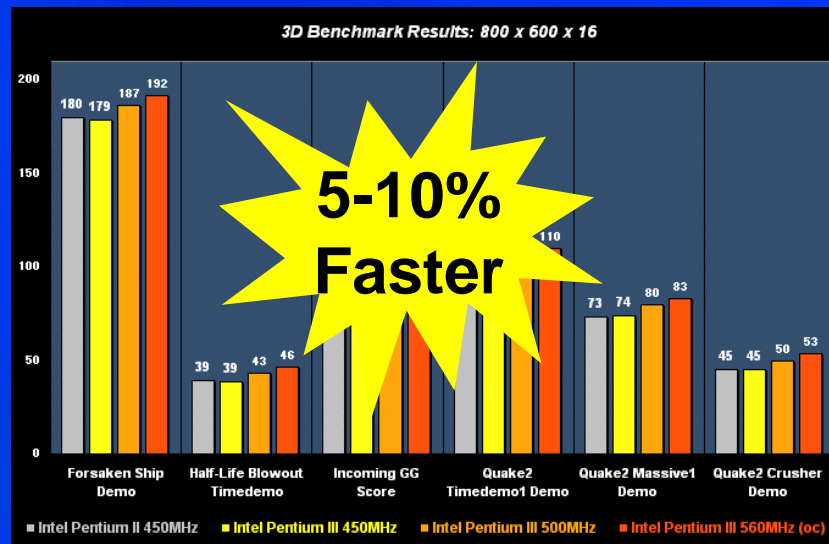
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# Why Buy Performance Headroom

A PC Purchase Choice



## Pentium® II processor 450MHz vs. Pentium® III processor 500MHz



“With the 500MHz PIII chip, the only substantial advantage over the PII-450 is that extra 50MHz.”

<http://www.ars-technica.com/cpu/1q99/slot-one-8.html>

[http://www.sharkyextreme.com/hardware/intel\\_p3\\_500/e.shtml#1](http://www.sharkyextreme.com/hardware/intel_p3_500/e.shtml#1)

***Press/Analyst recommendation –  
Buy Pentium® II processor based PC***

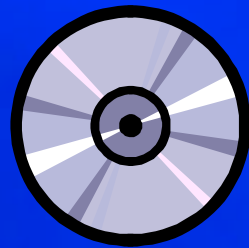


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# Why Buy Performance Headroom

Technology Changes 1999-2002



CD-RW



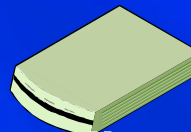
Quake\* III Arena



Digital Video and Still Cameras



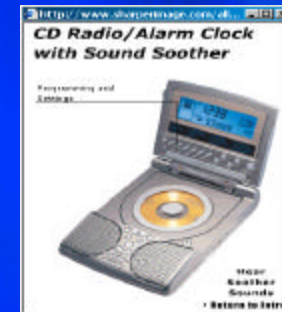
MP3 Craze



Broadband



Video Editing Ships  
Standard with OS



Rich 3D and  
animations on the net

1999

Time

2001

***Technology Innovations Occur Quickly***



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# Why Buy Performance Headroom

Same Systems, Today...

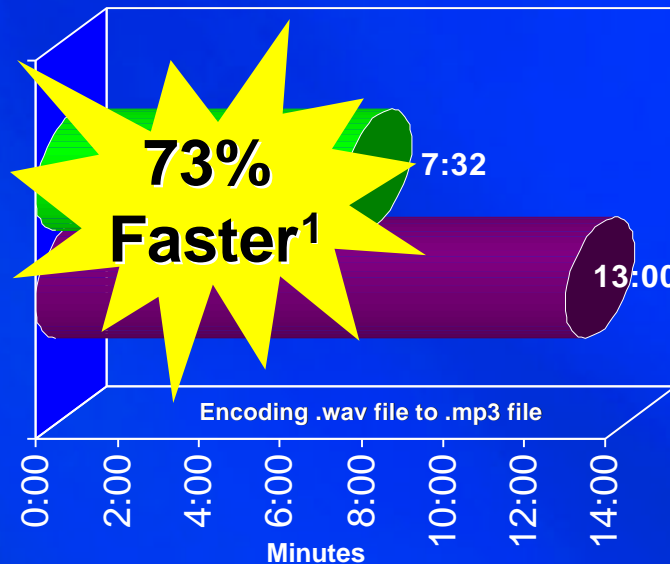


## Audio Benchmark

eJay\* MP3 Plus 1.3

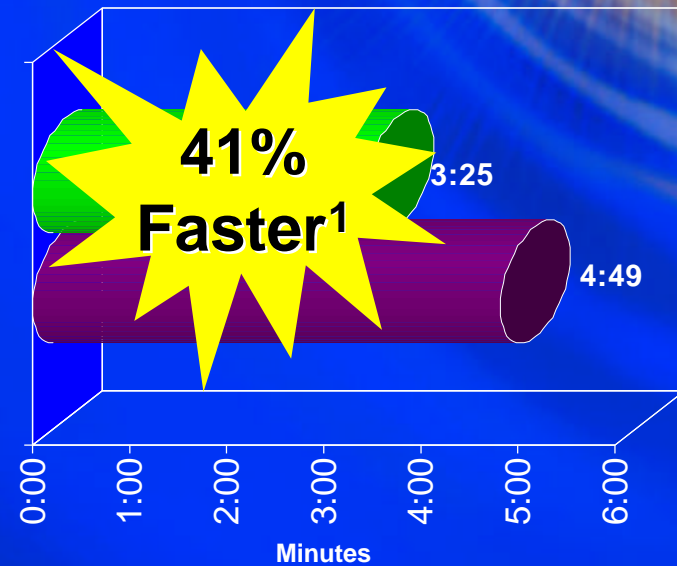
Pentium® III  
processor 500MHz

Pentium® II  
processor 450MHz



## Video Encoding Benchmark

Windows\* Media Encoder 7.0



***Buying Higher Performance Delivered a  
Better Return on Investment***



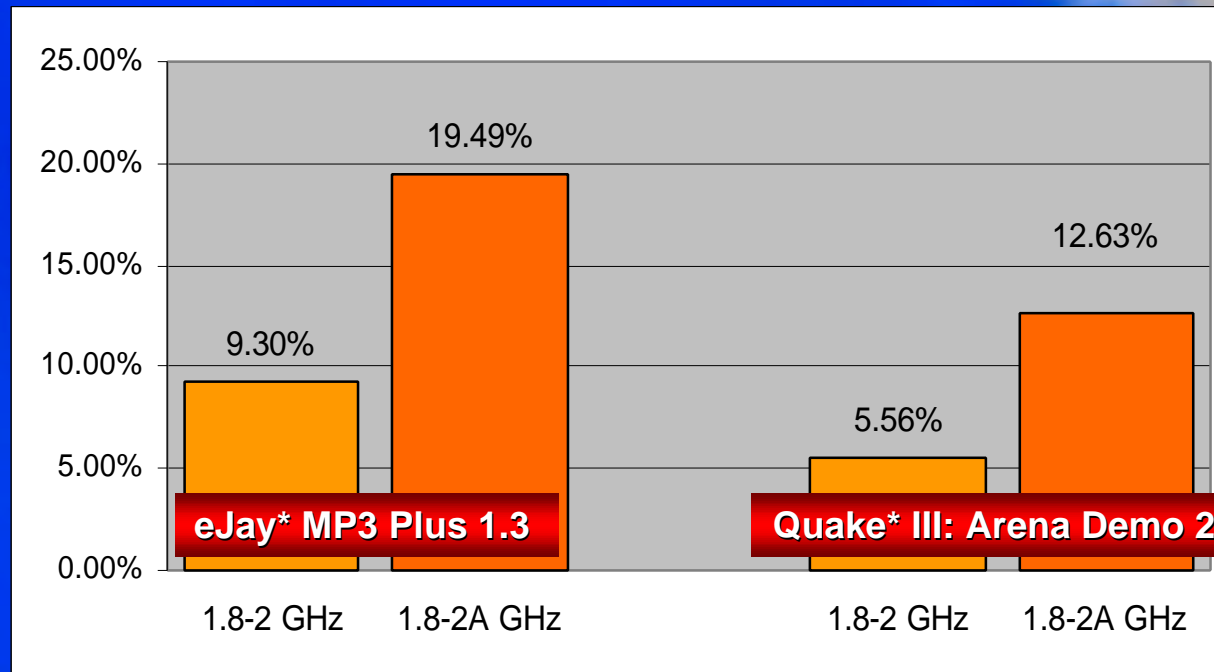
Source: Intel Config: Pentium II processor 450, Pentium III processor 500 Intel Seattle SE440BX-2, 128 MB PC100 CL2 SDRAM Diamond Viper 550 / nVidia TNT 2x AGP with 16 MB memory IBM DTTA-301010 10GB ATA-33 DMA on, Integrated sound 1024x768 at 16-bit color, Quake III demo at 640x480 w/o sound, NVidia reference driver 6.31 with MS DirectX 8.0, Windows ME (build 3000.2). FAT32 partition, 32-bit File System with "System Restore" DISABLE.

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# Why Buy Pentium® 4 processor 2.20 GHz

Intel's 0.13μ process technology delivers



Performance Gains when moving from 1.80 GHz to:

- Pentium® 4 processor 2 GHz
- Pentium® 4 processor 2A GHz

***Significant performance gains with Intel's latest  
0.13μ process technology***



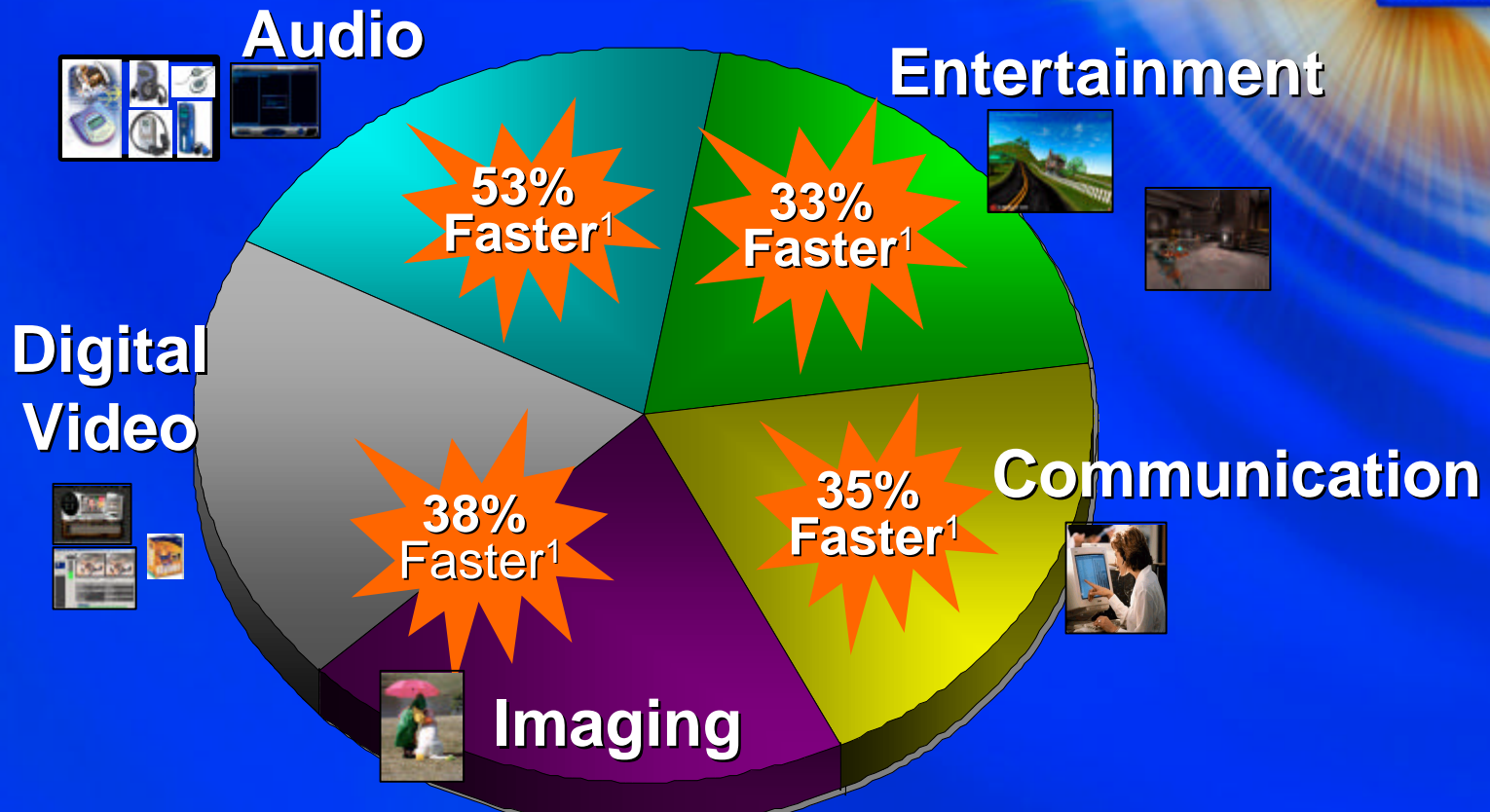
Pentium® 4 processor at 1.80, 2 GHz, 2A GHz – Intel® Desktop Board D850MD, 256MB PC800 RDRAM –45; Intel® 850 Chipset Platform – IBM® 30GB ATA-100 DTLA-307030 hard drive, Intel® chipset INF file v3.200.1008, Intel® Application Accelerator Storage Driver v1.01, Leadtek® WinFast/ nVidia® GeForce® 3 4x AGP, nVidia Detonator® 4 v21.81 graphics driver, 1024x768 at 16-bit color, DirectX® 8.1, Windows® XP, 100 Mbps LAN; Intel® C & Fortran compilers 5.01 for SPEC; Intel® Pro/100+ PCI LAN. Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance.

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# Why Buy Pentium® 4 processor 2.20 GHz

Faster performance vs. Pentium® 4 processor 1.50 GHz



*Better performance for today's usage models*



<sup>1</sup>When comparing Pentium® 4 processor 2.20 GHz vs. Pentium 4 processor 1.50 GHz

Pentium® 4 processor at 1.50 GHz, 1.70 GHz, 2 GHz, 2A GHz, 2.20 GHz – Intel® Desktop Board D850MD, 256MB PC800 RDRAM –45; Intel® 850 Chipset Platform – IBM® 30GB ATA-100 DTLA-307030 hard drive, Intel® chipset INF file v3.200.1008, Intel® Application Accelerator Storage Driver v1.01, Leadtek® WinFast/ nVidia® GeForce®3 4x AGP, nVidia Detonator® 4 v21.81 graphics driver, 1024x768 at 16-bit color, DirectX® 8.1, Windows® XP, 100 Mbps LAN; Intel® C & Fortran compilers 5.01 for SPEC; Intel® Pro/100+ PCI LAN. Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance.

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# Why Buy Pentium® 4 processor 2.20 GHz

Pentium® 4 processor ready for TOMORROW'S usage models



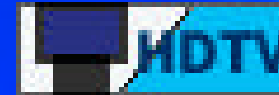
Performance needs



**MPEG-4  
New Video  
Technology**



**DVD Authoring**



**HDTV**



????



**Peer to Peer**



**Multiple Connected  
Devices in home**



**Software  
Upgrades**



**New OS**

Today

Time

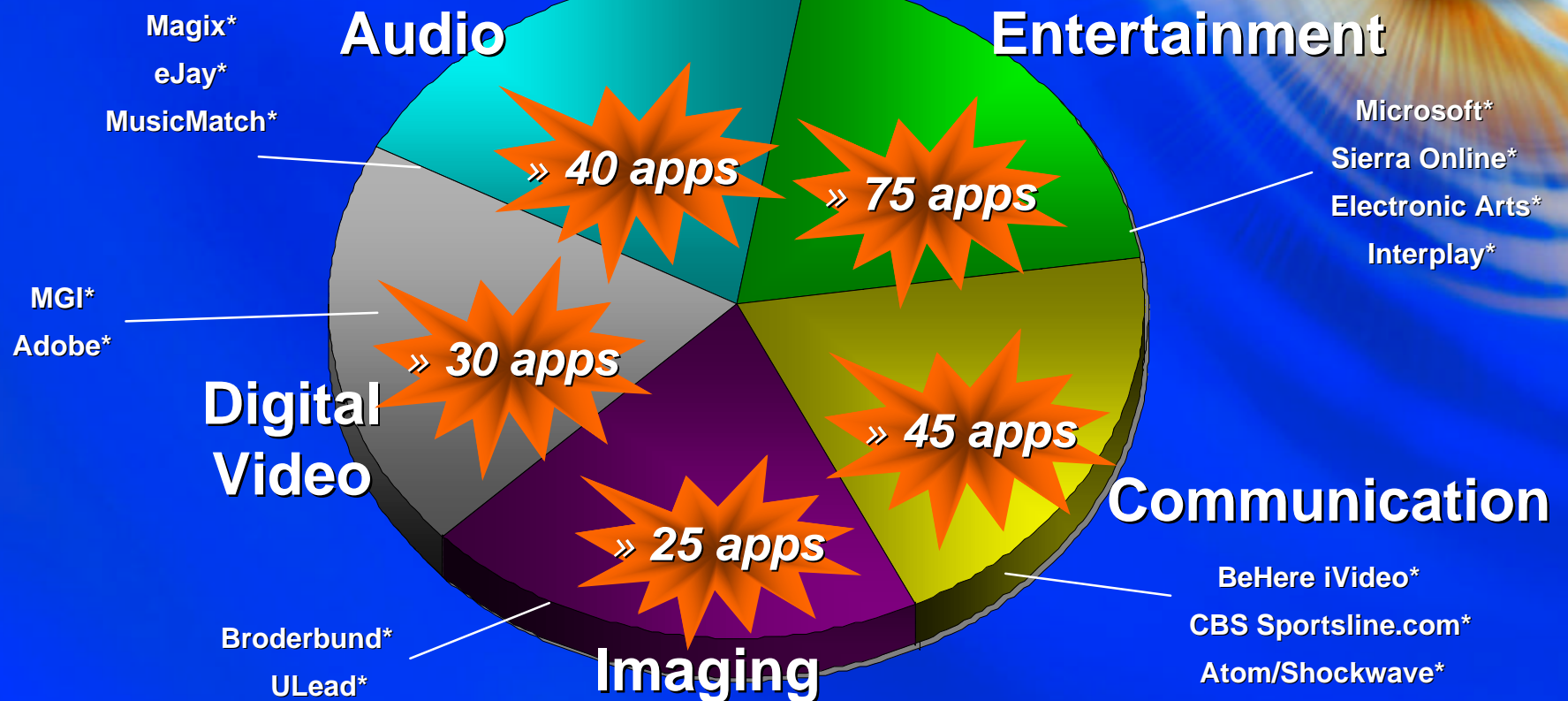
*Innovations and New Uses Will Continue  
Into The Future*



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# Why Buy Pentium® 4 processor 2.20 GHz

Pentium® 4 processor Optimized Software



*Critical Mass of Software Today  
More Titles Coming in 2002*



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# Pentium® 4 processor 2.20 GHz

## Summary



**New Pentium® 4 processors built on 0.13μ process deliver improved performance**

**Pentium® 4 processor and Windows\* XP delivers improved user experience vs. the installed base of PCs**

**Pentium 4 processor delivers awesome performance for today's digital media**

**Pentium 4 processor delivers the headroom to deliver best experience with future technology and innovations**

**Buying more MHz = Longer useful life**

***Pentium® 4 processor.  
The center of your digital world***





# Extra Materials



# The Intel Advantage

Quality and Compatibility : The Intel Way



## Intel investment in desktop processor validation:

- 320 validation engineers
- \$40 million spent annually

**Intel begins testing processors while in the design phase**

**Intel continues testing post manufacturing**

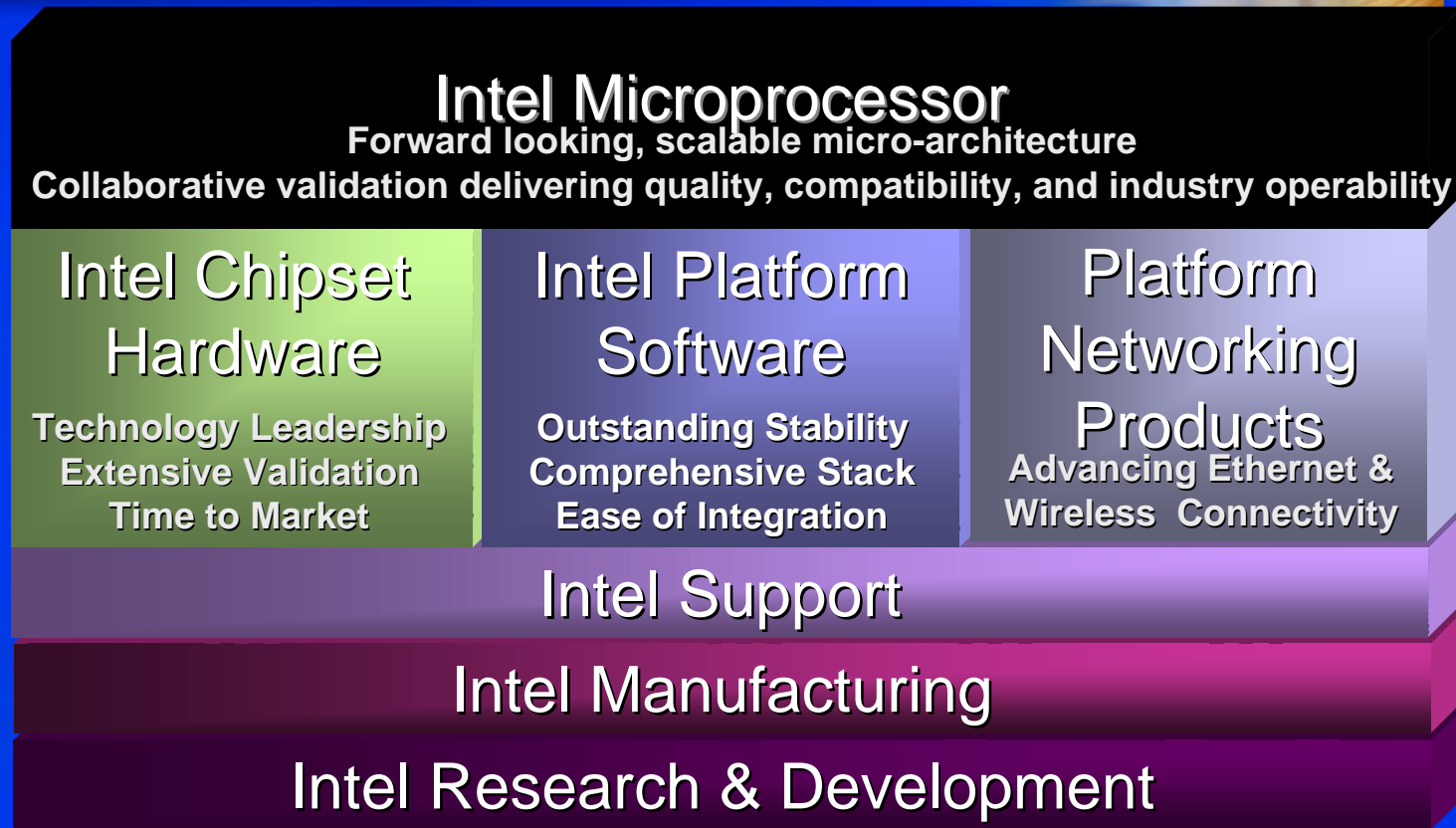
**Coordination with software and hardware companies worldwide to ensure compatibility with Intel products**

***Delivering Performance Customers Can Rely On***



# The Intel Advantage

## Complete Platform Solutions



*Intel's delivers more than just the processor, Intel delivers the whole platform*

# Pentium® 4 processor

## Sales Analogies



### Buying Up – Kid Clothes

- When parents buy clothes for their small children, usually they buy them a couple of sizes bigger they are are today.
- This allows the children to grow into them, not out of them
- Buying a faster processor today allows you to grow into your computer, not out of it.

### Buying Up – Milk Expiration Date

- When you buy milk at the grocery store, do you buy the carton with the expiration date nearest to that day?
- Most people buy the carton with the expiration date farthest out, which gives them more “headroom” or time to drink it
- Buying the fastest processor today gives you the longest useful life

***Windows\* XP includes Pentium® 4 processor optimizations with end user benefits***





# Pentium® 4 processor

## Sales Analogies



Chipsets are like lanes on a highway, the more lanes you can travel on, the more quickly traffic passes through

Intel® 845 Chipset  
PC 133 SDRAM

1.06 GB/s  
Transfer Rate

Intel® 845 Chipset  
DDR 266

2.1 GB/s  
Transfer Rate

Intel® 850 Chipset  
PC 800 RDRAM

3.2 GB/s  
Transfer Rate

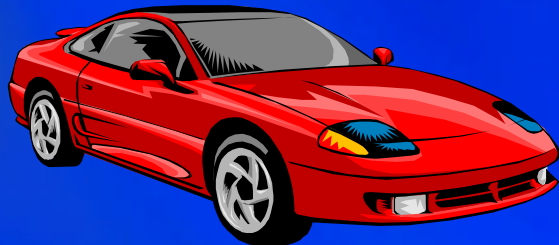
# Selling the Platform w/ Analogies

## Explaining differences to a consumer

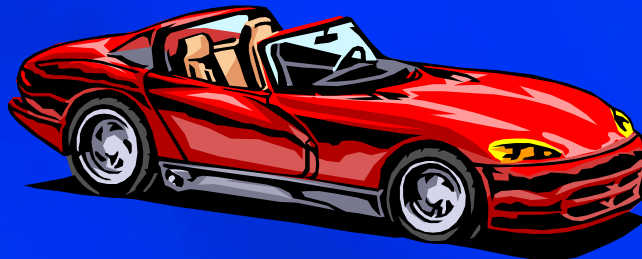


Processors are like cars, no matter what highway you travel on, the faster your car is, the quicker your performance will be

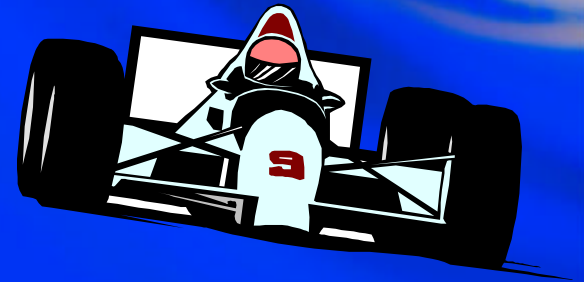
Pentium® 4 processor  
1.50-1.60 GHz



Pentium® 4 processor  
1.70-1.80 GHz



Pentium® 4 processor  
1.90 – 2.20 GHz



A sports car with a V6 engine, a sports car with a V8 engine, an Indy Race Car  
Indy race car is the fastest car, regardless of the “highway” you travel on

Likewise, the faster the Pentium® 4 processor you have, the faster your performance will be, regardless of the chipset **and memory** you choose



# Why Buy Pentium® 4 processor 2.20 GHz

Audio Performance



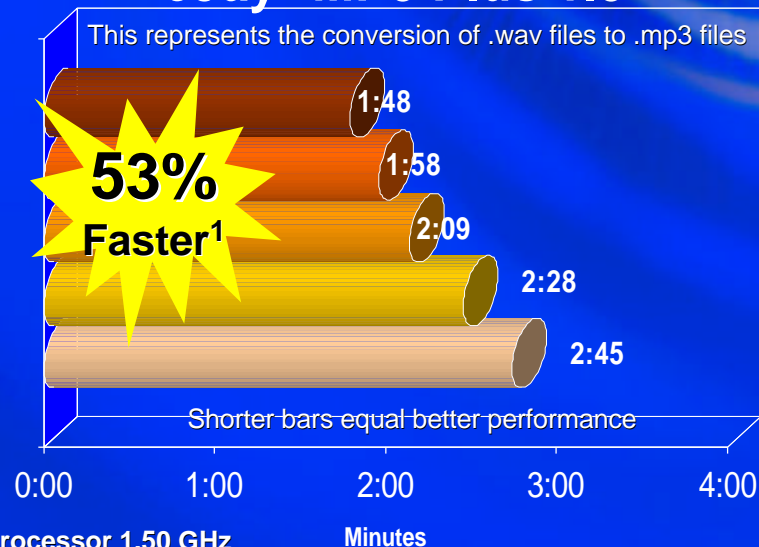
Use the power of your  
Pentium® 4 processor based  
PC to quickly convert audio  
files to MP3

Quickly create & edit your  
own music

Easily move your audio files  
to portable devices, send to  
friends/family, and other PCs  
within the home

- Pentium® 4 Processor 1.50 GHz
- Pentium® 4 Processor 1.70 GHz
- Pentium® 4 Processor 2 GHz
- Pentium® 4 Processor 2A GHz
- Pentium® 4 Processor 2.20 GHz

## eJay\* MP3 Plus 1.3



<sup>1</sup>When comparing Pentium® 4 processor 2.20 GHz vs. Pentium 4 processor 1.50 GHz

***Convert .wav Files to MP3 in Less Time***



Pentium® 4 processor at 1.50 GHz, 1.70 GHz, 2 GHz, 2AGHz, 2.20 GHz – Intel® Desktop Board D850MD, 256MB PC800 RDRAM –45; Intel® 850 Chipset Platform – IBM® 30GB ATA-100 DTLA-307030 hard drive, Intel® chipset INF file v3.200.1008, Intel® Application Accelerator Storage Driver v1.01, Leadtek® WinFast/ nVidia® GeForce® 3 4x AGP, nVidia Detonator® 4 v21.81 graphics driver, 1024x768 at 16-bit color, DirectX® 8.1, Windows® XP, 100 Mbps LAN; Intel® C & Fortran compilers 5.01 for SPEC; Intel® Pro/100+ PCI LAN. Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance.

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# Why Buy Pentium® 4 processor 2.20 GHz

Digital Video/Imaging Performance



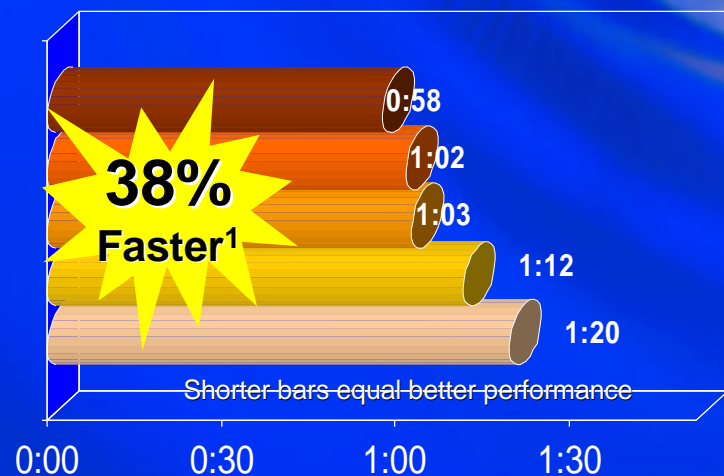
Power to more quickly add transitions, titles, filters, and other effects to your previously recorded video

Create your own feature film in less time

“Wait loss” when creating or editing digital video, audio

- Pentium® 4 Processor 1.50 GHz
- Pentium® 4 Processor 1.70 GHz
- Pentium® 4 Processor 2 GHz
- Pentium® 4 Processor 2A GHz
- Pentium® 4 Processor 2.20 GHz

## Windows® Media Encoder 7.0



<sup>1</sup>When comparing Pentium® 4 processor 2.20 GHz vs. Pentium 4 processor 1.50 GHz

Minutes

**Quickly Create, Edit, and Share  
Professional Quality Video**



Pentium® 4 processor at 1.50 GHz, 1.70 GHz, 2GHz, 2A GHz, 2.20 GHz – Intel® Desktop Board D850MD, 256MB PC800 RDRAM –45; Intel® 850 Chipset Platform – IBM® 30GB ATA-100 DTLA-307030 hard drive, Intel® chipset INF file v3.200.1008, Intel® Application Accelerator Storage Driver v1.01, Leadtek® WinFast/ nVidia® GeForce® 3 4x AGP, nVidia Detonator® 4 v21.81 graphics driver, 1024x768 at 16-bit color, DirectX® 8.1, Windows® XP, 100 Mbps LAN; Intel® C & Fortran compilers 5.01 for SPEC; Intel® Pro/100+ PCI LAN. Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance.

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# Why Buy Pentium® 4 processor 2.20 GHz

## Communications Performance



Experience a new level of communication on the web, with power for more accurate real-time voice recognition

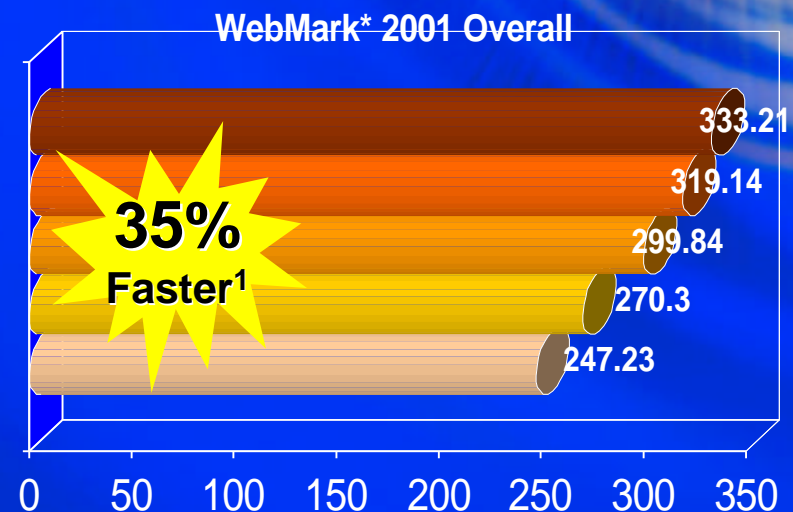
Power to communicate quickly and easily with friends/family

Higher quality 3D visualization for richer Internet browsing & shopping

Power to handle simultaneous applications while chatting online

- Pentium® 4 Processor 1.50 GHz
- Pentium® 4 Processor 2 GHz
- Pentium® 4 Processor 2.20 GHz

- Pentium® 4 Processor 1.70 GHz
- Pentium® 4 Processor 2A GHz



<sup>1</sup>When comparing Pentium® 4 processor 2.20 GHz vs. Pentium 4 processor 1.50 GHz

***Delivers Performance Today  
Ready for Tomorrow's Internet Innovations***



Pentium® 4 processor at 1.50 GHz, 1.70 GHz, 2 GHz, 2A GHz, 2.20 GHz – Intel® Desktop Board D850MD, 256MB PC800 RDRAM –45; Intel® 850 Chipset Platform – IBM® 30GB ATA-100 DTLA-307030 hard drive, Intel® chipset INF file v3.200.1008, Intel® Application Accelerator Storage Driver v1.01, Leadtek® WinFast/ nVidia® GeForce® 3 4x AGP, nVidia Detonator® 4 v21.81 graphics driver, 1024x768 at 16-bit color, DirectX® 8.1, Windows® XP, 100 Mbps LAN; Intel® C & Fortran compilers 5.01 for SPEC; Intel® Pro/100+ PCI LAN. Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance.

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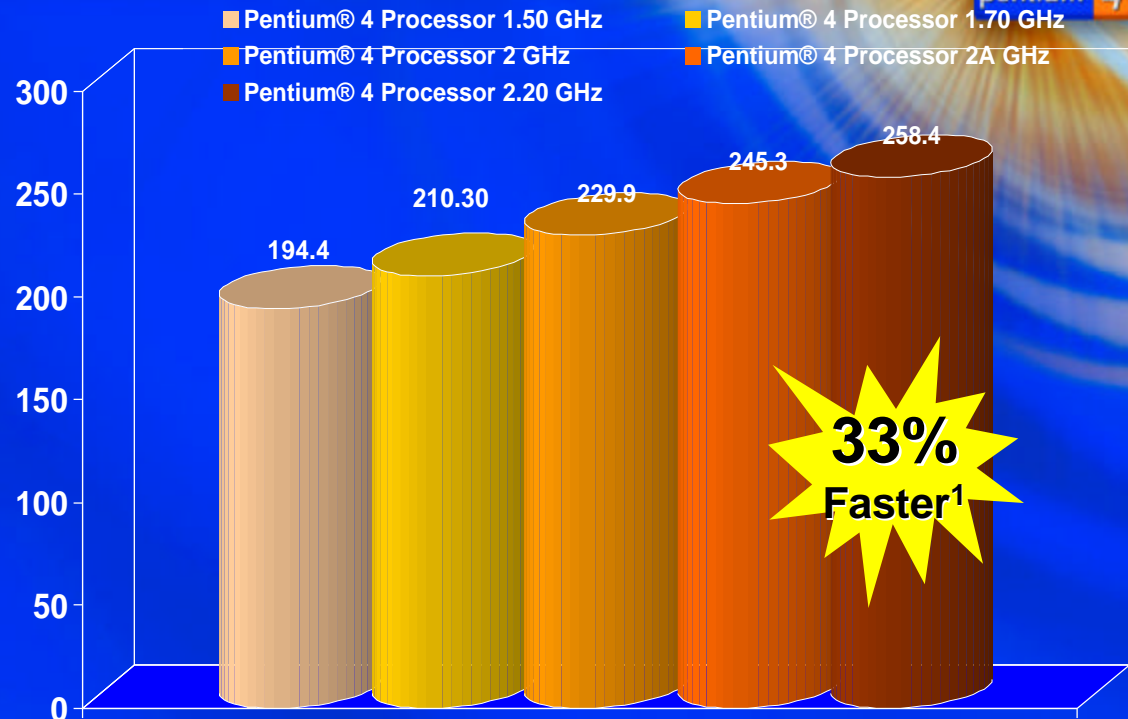
## Entertainment Performance



Take your interactive gaming to the extreme with the power of the Pentium® 4 processor

Performance for today's leading edge and tomorrow's next generation games

Power for smooth, high quality digital television decode



Quake® III: Arena Demo 2

<sup>1</sup>When comparing Pentium® 4 processor 2.20 GHz vs. Pentium 4 processor 1.50 GHz

**Great 3D Performance For On-line Gaming**



Pentium® 4 processor at 1.50 GHz, 1.70 GHz, 2 GHz, 2A GHz, 2.20 GHz – Intel® Desktop Board D850MD, 256MB PC800 RDRAM –45; Intel® 850 Chipset Platform – IBM® 30GB ATA-100 DTLA-307030 hard drive, Intel® chipset INF file v3.200.1008, Intel® Application Accelerator Storage Driver v1.01, Leadtek® WinFast/ nVidia® GeForce®3 4x AGP, nVidia Detonator® 4 v21.81 graphics driver, 1024x768 at 16-bit color, DirectX® 8.1, Windows® XP, 100 Mbps LAN; Intel® C & Fortran compilers 5.01 for SPEC; Intel® Pro/100+ PCI LAN. Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance.

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